

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: XXXX XX, 2021

Region: Mooresville Regional Office
County: Stanly
NC Facility ID: 8400020
Inspector's Name: Denise Hayes
Date of Last Inspection: 08/27/2020
Compliance Code: 3 / Compliance - inspection

Facility Data	Permit Applicability (this application only)
<p>Applicant (Facility's Name): H. W. Culp Lumber Co, Inc.</p> <p>Facility Address: H. W. Culp Lumber Co, Inc. 491 Old US 52 Highway New London, NC 28127</p> <p>SIC: 2421 / Sawmills & Planing Mills General NAICS: 321113 / Sawmills</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p>SIP: 15A NCAC 02D .0512, .0515, .0516, .0521, & .1806 NSPS: N/A NESHAP: 15A NCAC 02D .1111 – Subpart DDDD PSD: N/A PSD Avoidance: 15A NCAC 02Q .0317 NC Toxics: N/A 112(r): N/A Other: N/A</p>

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 8400020.20A Date Received: 12/15/2020 Application Type: Modification Application Schedule: TV-Sign-501(b)(2) Part II Existing Permit Data Existing Permit Number: 04897/T21 Existing Permit Issue Date: 01/26/2018 Existing Permit Expiration Date: 02/28/2022</p>
Mike Sasser ESH Manager (704) 463-7311 PO Box 235 New London, NC 28127+0235	Henry Culp, III President (704) 463-7311 PO Box 235 New London, NC 28127	Conrad Carter, Jr., P.E. President (704) 983-2302 PO Box 1760 Albemarle, NC 28002+1760	

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2019	3.90	76.47	231.05	26.53	72.47	25.95	9.60 [Methanol (methyl alcohol)]
2018	3.84	75.18	217.00	26.09	70.93	24.63	9.01 [Methanol (methyl alcohol)]
2017	3.95	77.47	228.68	26.87	75.19	25.82	9.50 [Methanol (methyl alcohol)]
2016	---	---	218.60	---	12.84	19.03	9.19 [Methanol (methyl alcohol)]
2015	---	---	208.12	---	12.15	18.27	8.82 [Methanol (methyl alcohol)]

<p>Review Engineer: David B. Hughes</p> <p>Review Engineer's Signature: _____ Date: XXXX XX, 2021</p>	<p>Comments / Recommendations:</p> <p>Issue 04897/T22 Permit Issue Date: XXXX XX, 2021 Permit Expiration Date: February 28, 2022</p>
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I. Purpose of Application

H. W. Culp Lumber Co, Inc. located in New London, Stanly County, North Carolina has submitted permit Application No. 8400020.20A, which is Part II of a two-step, 02Q .0501 (b)(2), significant modification to install a direct unadulterated wood-fired process heater for drying lumber (60 million Btu per hour maximum heat input (**ID No. ES-Kiln-3**) (Application No. 8400020.17A)) and to install a new fuel feed system (**ID No. ES-KFFS**) with associated cyclone (**ID No. C5**) (Application No. 8400020.17B). The application 8400020.20A was received on **December 15, 2020** and will go through the 30-day public notice and 45-day EPA review periods at this time.

II. Facility Description

The facility is an operating sawmill with wood planing and wood drying operations.

III. History/Background/Application Chronology

April 28, 2017 – Permit application **8400020.17A** received as a 15A NCAC 02Q .0501(b)(2) Part I Title V significant modification application. The application was deemed complete for processing.

October 26, 2017 – Air Toxics Dispersion Modeling Analysis for Formaldehyde from Marshall Rackley (RST Engineering, PLLC) is received.

November 21, 2017 – Permit application **8400020.17B** received as a 15A NCAC 02Q .0501(b)(2) Part I Title V significant modification. The application was deemed complete for processing.

November 29, 2017 – Memorandum from Matthew Porter, Meteorologist II, Air Quality Analysis Branch (AQAB) stating that the results from the Air Toxics Modeling Analysis are acceptable.

December 15, 2017 – Permit **04897T20** issued as a Title V significant modification.

January 26, 2018 – Permit **04897T21** issued as a Title V significant modification.

March 13, 2020 – The facility submitted notifications of initial startup for kiln (ID No. ES-Kiln-3) and kiln fuel feed system (ID No. ES-KFFS). The notifications stated that ES-Kiln-3 and ES-KFFS began operation on **February 28, 2020**.

December 15, 2020 – Permit application **8400020.20A** received as a 15A NCAC 02Q .0501(b)(2) Part II Title V significant modification for application Nos **8400020.17A** and **8400020.17B**. This application was deemed complete for processing.

February 5, 2021 - DRAFT permit sent to Permittee, Supervisor, Samir Parekh (Stationary Source Compliance Branch, Raleigh Central Office (RCO) and MRO for comment. Conrad Carter of H. W. Culp Lumber Company states via e-mail on **February 9, 2021** that he Mike Sasser of H. W. Culp Lumber Company have reviewed the draft permit and have no comment. Samir Parekh of RCO states via e-mail on **February 16, 2021** that he has reviewed the draft permit and has no comment. Denise Hayes (MRO) provided comments on draft permit via email on **February 16, 2021**.

Date – 30-day Public notice and 45-day review periods begin.

Date – Public notice period ends; no comments received

Date – EPA review period ends; no comments received

Date – Air Quality Permit No. **04897T22** issued.

IV. Permit Modifications/Changes and ESM Discussion

Page	Section	Description of Change
Attachment	Insignificant activities	-Amended permit revision number
Cover	-	-Amended all dates and permit revision numbers
All	Header	-Amended permit revision number
2	Section 1 (Table)	-Removed table references and footnote for emission source, One Kiln fuel feed system (ID No. ES-KFFS) as being part of a 15A NCAC 02Q .0501(b)(2) Part II significant modification.
7	2.1 A.2.c and e	-Updated permit language to match current shell version of TV Permit Conditions.
10	2.1 B.3 and e	-Updated permit language to match current shell version of TV Permit Conditions.
	2.1 B.4.d	-Updated permit language to match current shell version of TV Permit Conditions.
---	2.1 B.6	-Removed permit condition 15A NCAC 02Q .0504: “Option for Obtaining Construction and Operation Permit” since requirement to submit a permit application has been met.
	2.1 C.1.e	-Updated permit language to match current shell version of TV Permit Conditions.
	2.1 C.2.d and f	-Updated permit language to match current shell version of TV Permit Conditions.
---	2.1 C.3	-Removed permit condition 15A NCAC 02Q .0504: “Option for Obtaining Construction and Operation Permit” since requirement to submit a permit application has been met.
11-21	Section 3 General Conditions	-Updated shell conditions (v5.5, 08/25/2020)

There were no modifications to the equipment descriptions needed in Title V Equipment Editor (TVEE).

V. Applications

Application No. 840020.20A

H. W. Culp Lumber Co, Inc. submitted a permit application, which is Part II of a two-step, 02Q .0501 (b)(2), significant modification to install a direct unadulterated wood-fired process heater (ID No. ES-Kiln-3) and a kiln fuel feed system (ID No. ES-KFFS) as described below.

Application No. 840020.17A

H.P. Culp Lumber Co, Inc. requested an air permit modification for installation of a new direct unadulterated wood-fired process heater (ID No. ES-Kiln-3). ES-Kiln-3 will be 86’ long with a capacity of 191,000 board feet/charge capacity and a burner capacity of 60 million Btu per hour (mmBtu/hr) (same as ES-Kiln-2). They also requested an increase in maximum lumber drying kilns throughput for sources (ID Nos. ES-Kiln-1 and ES-Kiln-2) from 115,000,000 board feet of dried lumber on a 12-month rolling average (bd ft/yr) to 130,026,110 bd ft/yr. The VOC emissions using

130,026,1100 bd ft/yr and the VOC emission factor 3.83 pounds VOC emissions per thousand board feet of lumber dried, as provided in the DAQ's emission spreadsheet for kilns¹ are calculated to be 249 tons per year (tons/yr). The VOC emissions are less than 250 tons per consecutive 12-month period per regulation 15A NCAC 02Q .0317: Avoidance Condition for 15A NCAC 02D .0530 Prevention of Significant Deterioration.

H.P. Culp Lumber Co, Inc. becomes subject to 15A NCAC 02D .1111: Maximum Achievable Control Technology and 40 CFR Part 63 Subpart DDDD, "National Emission Standards for Hazardous Air Pollutants for the Plywood and Composite Wood Products", with the addition of ES-Kiln-3.

The technical review (**December 15, 2017**) for the Part I application is identified as Attachment 1 of this Document.

Application No. 8400020.17B

H. W. Culp Lumber Co, Inc. requested an air permit modification for installation of a new fuel feed system (ID No. ES-KFFS) with associated cyclone (ID No. C5). This system will process fuel for ES-Kiln-2 and ES-Kiln-3. All three (3) kilns will continue to receive fuel from the existing hammer mill operation (ID No. ES-4) but fuel for ES-Kiln-2 and ES-Kiln-3 will be split off downstream of the hammer mill to the proposed kiln fuel feed system (ID No. ES-KFFS) with new cyclone (ID No. C5).

The technical review (**January 26, 2018**) for the Part I application is identified as Attachment 2 of this Document.

VI. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 02D .0512, Particulates from Wood Products Finishing Plants
15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes
15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 02D .0521, Control of Visible Emissions
15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions
15A NCAC 02Q .0317, Avoidance Conditions (for 15A NCAC 2D .0530, Prevention of Significant Deterioration)
15A NCAC 02D .1111, Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)

A regulatory review for these current permit conditions will not be included in this document.

VII. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The Permittee is not currently subject to any New Source Performance Standards. This permit modification does not affect this status.

NESHAPS/MACT - The Permittee is subject to 15A NCAC 02D .1111: Maximum Achievable Technology and 40 CFR Part 63 Subpart DDDD, "National Emission Standards for Hazardous Air Pollutants for the Plywood and Composite Wood Products", with the addition of ES-Kiln-3. The facility used emission factors from DAQ's spreadsheet for kilns¹ to determine the HAP emissions from the increased production rate of 130,026,110 bd ft/yr. According to calculations from the application, emissions of methanol, the single largest HAP, were 10.47 tons/yr (greater than 10

tons/yr), and the total HAP emissions were 21.68 tons/yr (less than 25 tons/yr). The permit requires initial notification for ES-Kiln-3.

The facility is now classified as a Title III major facility. As part of this permit modification process, the facility was reviewed for major source MACT applicability. Note that the major source MACT for combustion sources – 40 CFR 63, Subpart DDDD – only applies to indirect-fired units. The Permittee operates direct-fired lumber drying units that are not subject to any requirements. The kiln fuel feed system ES-KFFS is not subject to 40 CFR 63, Subpart DDDD. This permit modification does not affect this status.

PSD – The Permittee operates under a PSD avoidance condition limiting volatile organic compound emissions to less than 250 tons per year and limit kiln operations to less than 130,026,110 bd ft/yr on a 12-month rolling average basis from the two lumber kilns (**ID Nos. ES-Kiln-1 and ES-Kiln-2**). The permit condition includes monthly calculations (amount of lumber dried times an emission factor of 3.83 pounds VOC per thousand board feet) and recordkeeping of VOC emissions and semiannual reporting requirements.

This facility was a PSD minor but with the addition of Kiln 3 they are now considered PSD major. Because of the facility's baseline to potential demonstration, no specific condition is necessary for Kiln 3. The facility will now be considered PSD major going forward. This permit modification does not affect this status.

112(r) – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store one or more of the regulated substances in quantities above the thresholds in the Rule. This permit modification does not affect this status.

CAM

40 CFR Part 64 is applicable to any pollutant-specific emission unit, if the following three conditions are met:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- the unit's pre-control potential emission rate exceeds either 100 tpy (for criteria pollutants) or 10/25 tpy (for HAP's).

The unadulterated wood-fired process heater (ID No. ES-Kiln-3) is not subject to CAM due to the fact that there is no control device associated with this emission source.

The addition of the new fuel feed system (ID No. ES-KFFS) with associated cyclone (ID No. C5) resulted in an increase in PM10 by 0.882 tons per year. Therefore, since the unit is not classified as a large PSEU (pollutant specific emission unit; e.g., >100 tpy PM10 post control), CAM analysis is not necessary per Part 64 until the next renewal.

40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard. The following table identifies the current equipment/control device relationships:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES1	One wood planing operation	C1	One cyclone (168 inches in diameter)
		4B	One bagfilter (5,992 square feet of filter area)
ES2	One wood working operation	C2	One cyclone (51 inches in diameter)
ES4	One hammermill operation	C4	One cyclone (102 inches in diameter)
IES-11	One saw sharpening operation and associated	NA	One bagfilter (689 square feet of filter area)

CAM has been determined to be applicable to these control devices. This permit modification does not affect this status.

VIII. Facility Wide Air Toxics

Toxic air permit limits were removed in permit review (Air Permit No. 04897T20) due to the three kilns (ID Nos. ES-Kiln-1, ES-Kiln-2 and ES-Kiln-3) being subject to 40 CFR Part 63, Subpart DDDD.

H. W. Culp Lumber Co, Inc. submitted an air toxic dispersion modeling analysis for formaldehyde for the three kilns. The modeling was reviewed by Mr. Matthew Porter, Meteorologist II, Air Quality Analysis Branch (AQAB).

According to Mr. Porter's memorandum dated November 29, 2017, the modeling of maximum-allowable facility-wide TAPs emissions adequately demonstrates compliance with AAL outlined in 15A NCAC 02D .1104, on a source by source basis, for formaldehyde. Therefore, the modeling analysis supports the determination that facility-wide formaldehyde emission increases and addition of ES-Kiln-3 poses no unacceptable risk to human health. This permit modification does not affect this status.

IX. Facility Emissions Review

See Table in the header for a summary of the actual emissions as reported to DAQ from the years 2015 to 2019.

X. Stipulation Review

The facility was last inspected by Denise Hayes on **August 27, 2020**. Based on her observations the facility appeared to be in compliance with their Title V permit requirements.

Compliance History (5-year)

07/20/20 A Notice of Deficiency (NOD) was issued for failure to submit the initial notification for kiln (ID No. ES-Kiln 3). The facility submitted the required notification on July 24, 2020.

XI. Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521

The Mecklenburg County Department of Environmental Protection is an affected area within 50 miles of this facility.

XII. Conclusions, Comments, and Recommendations

A professional engineer's seal was not required for this modification.

A zoning consistency determination was not required for this modification.

MRO recommends issuance of the permit and was sent a DRAFT permit prior to issuance (See Section III of this document for a discussion).

RCO concurs with MRO's recommendation to issue the modified air permit.

ATTACHMENT 1

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: December 15, 2017

Region: Mooresville Regional Office
County: Stanly
NC Facility ID: 8400020
Inspector's Name: Carlotta Adams
Date of Last Inspection: 07/11/2017
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): H. W. Culp Lumber Co, Inc.

Facility Address:

H. W. Culp Lumber Co, Inc.
 491 Old US 52 Highway
 New London, NC 28127

SIC: 2421 / Sawmills & Planing Mills General

NAICS: 321113 / Sawmills

Facility Classification: Before: Title V **After:** Title V

Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02D .0512, .0515, .0516, .0521, .1806

NSPS: N/A

NESHAP: 15A NCAC 02D .1111 – Subpart DDDD

PSD: N/A

PSD Avoidance: 15A NCAC 02Q .0317

NC Toxics: N/A

112(r): N/A

Other: N/A

Contact Data

Application Data

Facility Contact

Mike Sasser
 ESH Manager
 (704) 463-7311
 PO Box 235
 New London, NC
 28127+0235

Authorized Contact

Henry Culp, III
 President
 (704) 463-7311
 PO Box 235
 New London, NC 28127

Technical Contact

Conrad Carter, Jr., P.E.
 President
 (704) 983-2302
 PO Box 1760
 Albemarle, NC
 28002+1760

Application Number: 8400020.17A

Date Received: 04/28/2017

Application Type: Modification

Application Schedule: TV-Sign-501(c)(2) Part I

Existing Permit Data

Existing Permit Number: 04897/T19

Existing Permit Issue Date: 03/27/2017

Existing Permit Expiration Date: 02/28/2022

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2015	---	---	208.12	---	12.15	18.27	8.82 [Methanol (methyl alcohol)]
2014	3.83	74.95	235.28	26.00	69.80	23.81	8.63 [Methanol (methyl alcohol)]
2013	3.64	71.27	220.03	24.73	66.40	22.36	8.07 [Methanol (methyl alcohol)]
2012	3.58	70.15	214.26	24.33	64.40	21.83	7.86 [Methanol (methyl alcohol)]
2011	3.17	62.09	197.37	21.55	56.98	19.92	7.24 [Methanol (methyl alcohol)]

Review Engineer: David Hughes	Comments / Recommendations: Issue 04897/T20 Permit Issue Date: December 15, 2017 Permit Expiration Date: February 28, 2022
Review Engineer's Signature: _____ Date: December 15, 2017	

I. Purpose of Application

Air Permit Application No. 8400020.17A was received on **April 28, 2017** for a significant modification pursuant to 15A NCAC 02Q .0501(c)(2) to add a direct unadulterated wood-fired process heater for drying lumber (60 million Btu per hour maximum heat input (**ID No. ES-Kiln-3**)). An increase in the maximum throughput in kilns (**ID Nos. K-1 and E-9**) has been requested. The ID Nos. for Kiln 1 and 2 (**ID Nos. K-1 and E-9**) are also being changed to ID Nos. **ES-Kiln-1 and ES-Kiln-2**.

II. Facility Description

The facility is an operating sawmill with wood planing and wood drying operations.

III. History/Background/Application Chronology

March 24, 2017 – Permit **04897T19** issued as a Title V renewal/significant modification.

April 28, 2017 – Permit application 8400020.17A received as a Title V significant modification application. The application was deemed complete for processing.

June 23, 2017 – North Carolina Division of Air Quality (NCDAQ) request a D1 form from facility.

October 26, 2017 – Air Toxics Dispersion Modeling Analysis for Formaldehyde from Marshall Rackley (RST Engineering, PLLC) is received.

November 29, 2017 – Memorandum from Matthew Porter, Meteorologist II, Air Quality Analysis Branch (AQAB) stating that the results from the Air Toxics Modeling Analysis are acceptable.

November 30, 2017 - DRAFT permit sent to Permittee and MRO for comment. The Permittee provided comments on draft permit via e-mail on **December 7, 2017**. Denise Hayes of MRO states via e-mail on **December 12, 2017** that she has reviewed the draft permit and has no comment.

IV. Permit Modifications/Changes and ESM Discussion

Page	Section	Description of Change
Attachment	Insignificant activities	-amended permit revision number
Cover	-	-amended all dates and permit revision numbers
All	Header	-amended permit revision number
2	Section 1 (Table)	-changed Kilns ID Nos. K1 and ES-9 to ES-Kiln-1 and ES-Kiln-2 -added a new Kiln - ID No. ES-Kiln-3
4	2.1 B (Table)	-changed Kilns ID Nos. K1 and ES-9 to ES-Kiln-1 and ES-Kiln-2

Page	Section	Description of Change
		-added a new Kiln - ID No. ES-Kiln-3 -removed references to permit conditions for 15A NCAC 02Q .0317 (MACT Avoidance) -add 40 CFR Part 63, Subpart DDDD -removed references to permit conditions for Toxic Air Pollutants 15A NCAC 02D .1100 and 02Q .0711
---	2.1 B	-removed references to permit conditions for Toxic Air Pollutants 15A NCAC 02D .1100
6	2.1 B.4	-added Limit for Kiln 1 and 2 operations to less than 130,026,110 bd ft/yr on a 12-month rolling average to 15A NCAC 02Q .0317 (PSD Avoidance)
---	2.1 B	-removed references to permit conditions for 15A NCAC 02Q .0317 (MACT Avoidance)
7	2.1 B.5	-added references to permit conditions for 15A NCAC 02D .1111 MACT and 40 CFR Part 63, Subpart DDDD
7	2.1 B.6	-added references to permit condition for 15A NCAC 02Q .0504
9	2.2 A (Table)	-removed references to permit conditions for Toxic Air Pollutants 15A NCAC 02Q .0711
---	2.2 A	-removed references to permit conditions for Toxic Air Pollutants 15A NCAC 02Q .0711
11-21	General Conditions	-updated shell conditions (v5.1 08/03/2017)

There were only minor, non-significant modifications to the equipment descriptions needed in Title V Equipment Editor (TVEE).

V. Application No. 840020.17A

H.P. Culp Lumber Co. Inc. has requested an air permit modification for installation of a new direct unadulterated wood-fired process heater (ID No. ES-Kiln-3). ES-Kiln-3 will be 86' long with a capacity of 191,000 board feet/charge capacity and a burner capacity of 60 million Btu per hour (mmBtu/hr) (same as ES-Kiln-2). They have also requested an increase in maximum lumber drying kilns throughput for sources (ID Nos. ES-Kiln-1 and ES-Kiln-2) from 115,000,000 board feet of dried lumber on a 12-month rolling average (bd ft/yr) to 130,026,110 bd ft/yr. The VOC emissions using 130,026,1100 bd ft/yr and the VOC emission factor 3.83 pounds VOC emissions per thousand board feet of lumber dried, as provided in the DAQ's emission spreadsheet for kilns¹ are calculated to be 249 tons per year (tons/yr). The VOC emissions are less than 250 tons per consecutive 12-month period per regulation 15A NCAC 02Q .0317: Avoidance Condition for 15A NCAC 02D .0530 Prevention of Significant Deterioration.

H.P. Culp Lumber Co. becomes subject to 15A NCAC 02D .1111: Maximum Achievable Control Technology and 40 CFR Part 63 Subpart DDDD, "National Emission Standards for Hazardous Air Pollutants for the Plywood and Composite Wood Products", with the addition of ES-Kiln-3.

VI. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 02D .0512, Particulates from Wood Products Finishing Plants
15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes

15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 02D .0521, Control of Visible Emissions
15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions
15A NCAC 02Q .0317, Avoidance Conditions (for 15A NCAC 2D .0530, Prevention of Significant Deterioration)
15A NCAC 02D .1111, Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)

A regulatory review for these current permit conditions will not be included in this document.

VII. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The Permittee is not currently subject to any New Source Performance Standards. This permit modification does not affect this status.

NESHAPS/MACT - The Permittee is subject to 15A NCAC 02D .1111: Maximum Achievable Technology and 40 CFR Part 63 Subpart DDDD, “National Emission Standards for Hazardous Air Pollutants for the Plywood and Composite Wood Products”, with the addition of ES-Kiln-3. The facility used emission factors from DAQ’s spreadsheet for kilns¹ to determine the HAP emissions from the increased production rate of 130,026,110 bd ft/yr. According to calculations from the application, emissions of methanol, the single largest HAP, were 10.47 tons/yr (greater than 10 tons/yr), and the total HAP emissions were 21.68 tons/yr (less than 25 tons/yr). The permit requires initial notification for ES-Kiln-3.

The facility is now classified as a Title III major facility. As part of this permit modification process, the facility was reviewed for major source MACT applicability. Note that the major source MACT for combustion sources – 40 CFR 63, Subpart DDDD – only applies to indirect-fired units. The Permittee operates direct-fired lumber drying units that are not subject to any requirements.

PSD – The Permittee requested adding 15,000,000 bd ft/yr to the existing 115,000,000 bd ft/yr on a 12-month rolling average for the two lumber kilns (**ID Nos. ES-Kiln-1 and ES-Kiln-2**). The Permittee will now operate under a PSD avoidance condition limiting volatile organic compound emissions to less than 250 tons per year and limit kiln operations to less than 130,026,110 bd ft/yr on a 12-month rolling average basis from the two lumber kilns (**ID Nos. ES-Kiln-1 and ES-Kiln-2**). The permit condition includes monthly calculations (amount of lumber dried times an emission factor of 3.83 pounds VOC per thousand board feet) and recordkeeping of VOC emissions and semiannual reporting requirements.

This facility was a PSD minor but with the addition of Kiln 3 they are now considered PSD major. Because of the facility’s baseline to potential demonstration, no specific condition is necessary for Kiln 3. The facility will now be considered PSD major going forward.

112(r) – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store one or more of the regulated substances in quantities above the thresholds in the Rule. This permit modification does not affect this status.

CAM – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard. The following table identifies the current equipment/control device relationships:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES1	One wood planing operation	C1	One cyclone (168 inches in diameter)
		4B	One bagfilter (5,992 square feet of filter area)
ES2	One wood working operation	C2	One cyclone (51 inches in diameter)
ES4	One hammermill operation	C4	One cyclone (102 inches in diameter)
IES-11	One saw sharpening operation and associated	NA	One bagfilter (689 square feet of filter area)

CAM has been determined to be applicable to these control devices. This permit modification does not affect this status.

VIII. Facility Wide Air Toxics

Removal of toxic permit limits.

H. W. Culp Lumber Company has requested that the existing Toxic Air Pollutants (TAPs) limits be removed from the permit to the extent allowed by the NCDAQ regulations. The Division of Air Quality acknowledges that the toxic permit limits for affected sources (ID Nos. ES-Kiln-1, ES-Kiln-2, and ES-Kiln-3) are subject to 40 CFR Part 63, Subpart DDDD are potentially eligible for removal from the permit in accordance with the following General Statute recently modified by HB952 (June 28, 2012). The applicant requested that DAQ review those exempt sources for their risk potential and if eligible, remove the toxic requirements as a result.

G.S. 143-215.107(a)(5) ...The Department shall implement rules adopted pursuant to this subsection as follows:

- a. Except as provided in sub-subdivision b. of this subdivision, rules adopted pursuant to this subdivision that control emissions of toxic air pollutants shall not apply to an air emission source that is any of the following:

 - 1. Subject to an applicable requirement under 40 C.F.R. Part 61, as amended.*
 - 2. An affected source under 40 C.F.R. Part 63, as amended.*
 - 3. Subject to a case-by-case maximum achievable control technology (MACT) permit requirement issued by the Department pursuant to 42 U.S.C. § 7412(j), as amended.**
- b. Upon receipt of a permit application for a new source or facility, or for the modification of an existing source or facility, that would result in an increase in the emission of toxic air pollutants, the Department shall review the application to determine if the emission of toxic air pollutants from the source or facility would present an unacceptable risk to human health. Upon making a written finding that a source or facility presents or would present an unacceptable risk to human health, the Department shall require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. The written finding may be based on modeling, epidemiological studies, actual monitoring data, or other information that indicates an unacceptable health risk. When the Department requires the owner or operator of a source or*

facility to submit a permit application pursuant to this sub-subdivision, the Department shall report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

The removal of the current toxic emission limits requires that an analysis be performed under 143-215.107 (a)(5)(b). DAQ has evaluated toxic emissions from this facility to determine if the removal of the limitations under 15A NCAC 02D .1100 restricting the facility-wide emissions of toxic air pollutants (TAPs) presents an unacceptable risk to human health.

Dispersion modeling was conducted for 1 hr pollutants, formaldehyde, acrolein, and phenol in 2008. The process stack emissions were each modeled at 90% of the total unit emission rates, with the remaining 10% assigned to each volume source (fugitives). The modeling results are included in the following table.

TAP		ES-Kiln-1	ES-Kiln-2	Total
Formaldehyde	Stack Rate 90%	1.61 lb/hr	2.04 lb/hr	4.05 lb/hr
	Volume 10%	0.18 lb/hr	0.23 lb/hr	
	Total	1.79 lb/hr	2.26 lb/hr	
Acrolein	Stack Rate 90%	0.35 lb/hr	0.438 lb/hr	0.87 lb/hr
	Volume 10%	0.0385 lb/hr	0.0487 lb/hr	
	Total	0.385 lb/hr	0.487 lb/hr	
Phenol	Stack Rate 90%	1.05 lb/hr	1.495 lb/hr	2.82 lb/hr
	Volume 10%	0.12 lb/hr	0.166 lb/hr	
	Total	1.16 lb/hr	1.66 lb/hr	

The ambient impact for formaldehyde was modeled to be approximately 80% of the 1-hour Acceptable Ambient Levels (AAL). Potential emissions of acrolein and phenol were modeled at below 10% of the AAL. No further discussion needed to address acrolein and phenol due to very low impact relative to AAL.

H. W. Culp reports in the application that since modeling was conducted in 2008, ES-Kiln-1 has been derated to 138,000 board feet per minute capacity and the reduction of fugitives assumed to be 5% of total emissions. The updated formaldehyde emissions for all three kilns are shown below in the following table.

TAP		ES-Kiln-1	ES-Kiln-2	ES-Kiln-3	Total
Formaldehyde	Stack Emission Rate	1.55 lb/hr	2.15 lb/hr	2.15 lb/hr	6.15 lb/hr
	Fugitives	0.082 lb/hr	0.113 lb/hr	0.113 lb/hr	
	Total	1.64 lb/hr	2.26 lb/hr	2.26 lb/hr	

The total emissions for formaldehyde is 6.15 lb/hr, which is 121% of the AAL.

H. W. Culp submitted an air toxic dispersion modeling analysis for formaldehyde for the three kilns because NCDAQ had questions regarding the dispersion modeling for formaldehyde that was submitted in the application. The modeling was reviewed by Mr. Matthew Porter, Meteorologist II, Air Quality Analysis Branch (AQAB). The results from the updated modeling analysis for formaldehyde are shown below in the following tables.

Modeled Emission Rates for 1-hour Formaldehyde (HCHO) Point and Volume Sources

TAP		ES-Kiln-1	ES-Kiln-2	ES-Kiln-3	Total
Formaldehyde	Stack 1 Emission Rate	0.775 lb/hr	1.07 lb/hr	1.07 lb/hr	6.13 lb/hr
	Stack 3 Emission Rate	0.775 lb/hr	1.07 lb/hr	1.07 lb/hr	
	Fugitives	0.082 lb/hr	0.113 lb/hr	0.113 lb/hr	
	Total	1.63 lb/hr	2.25 lb/hr	2.25 lb/hr	

Maximum Modeled Impacts from Potential Emissions

Pollutant	Averaging Period	Maximum Modeled Impacts % of AAL
Formaldehyde	1-hour	75.5 %

According to Mr. Porter's memorandum dated November 29, 2017, the modeling of maximum-allowable facility-wide TAPs emissions adequately demonstrates compliance with AAL outlined in 15A NCAC 02D .1104, on a source by source basis, for formaldehyde. Therefore, the modeling analysis supports the determination that facility-wide formaldehyde emission increases and addition of ES-Kiln-3 poses no unacceptable risk to human health.

IX. Facility Emissions Review

See Table in the header for a summary of the actual emissions as reported to DAQ from the years 2011 to 2015.

X. Stipulation Review

The facility was last inspected by Carlotta Adams on **July 11, 2017**. Based on her observations the facility appeared to be in compliance with their Title V permit requirements.

XI. Affected State(s) Review

The Mecklenburg County Department of Environmental Protection is an affected area within 50 miles of this facility.

XII. Conclusions, Comments, and Recommendations

A professional engineer's seal was not required for this modification.

A zoning consistency determination was submitted with the application required for this modification.

MRO recommends issuance of the permit and was sent a DRAFT permit prior to issuance (See Section III of this document for a discussion).

RCO concurs with MRO's recommendation to issue the modified air permit.

ATTACHMENT 2

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: January 26, 2018

Region: Mooresville Regional Office
County: Stanly
NC Facility ID: 8400020
Inspector's Name: Carlotta Adams
Date of Last Inspection: 07/11/2017
Compliance Code: 3 / Compliance - inspection

Facility Data	Permit Applicability (this application only)
<p>Applicant (Facility's Name): H. W. Culp Lumber Co, Inc.</p> <p>Facility Address: H. W. Culp Lumber Co, Inc. 491 Old US 52 Highway New London, NC 28127</p> <p>SIC: 2421 / Sawmills & Planing Mills General NAICS: 321113 / Sawmills</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p>SIP: 15A NCAC 02D .0512, .0521, & .1806 NSPS: N/A NESHAP: N/A PSD: N/A PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: N/A</p>

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	
Mike Sasser ESH Manager (704) 463-7311 PO Box 235 New London, NC 28127+0235	Henry Culp, III President (704) 463-7311 PO Box 235 New London, NC 28127	Conrad Carter, Jr., P.E. President (704) 983-2302 PO Box 1760 Albemarle, NC 28002+1760	<p>Application Number: 8400020.17B Date Received: 11/21/2017 Application Type: Modification Application Schedule: TV-Sign-501(c)(2) Part I</p> <p align="center">Existing Permit Data</p> <p>Existing Permit Number: 04897/T20 Existing Permit Issue Date: 12/15/2017 Existing Permit Expiration Date: 02/28/2022</p>

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2016	---	---	218.60	---	12.84	19.03	9.19 [Methanol (methyl alcohol)]
2015	---	---	208.12	---	12.15	18.27	8.82 [Methanol (methyl alcohol)]
2014	3.83	74.95	235.28	26.00	69.80	23.81	8.63 [Methanol (methyl alcohol)]
2013	3.64	71.27	220.03	24.73	66.40	22.36	8.07 [Methanol (methyl alcohol)]
2012	3.58	70.15	214.26	24.33	64.40	21.83	7.86 [Methanol (methyl alcohol)]

Review Engineer: David Hughes Review Engineer's Signature: _____ Date: January 26, 2018	Comments / Recommendations: Issue 04897/T21 Permit Issue Date: January 26, 2018 Permit Expiration Date: February 28, 2022
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I. Purpose of Application

Air Permit Application No. 8400020.17B was received on **November 21, 2017** for a significant modification pursuant to 15A NCAC 02Q .0501(c)(2) to add a new fuel feed system (**ID No. ES-KFFS**) with associated cyclone (**ID No. C5**). This system will process fuel for kilns 2 and 3 (**ID Nos. ES-Kiln-2 and ES-Kiln-3**).

II. Facility Description

The facility is an operating sawmill with wood planing and wood drying operations.

III. History/Background/Application Chronology

April 28, 2017 – Permit application **8400020.17A** received as a Title V significant modification application. The application was deemed complete for processing.

June 23, 2017 – North Carolina Division of Air Quality (NCDAQ) request a D1 form from facility.

October 26, 2017 – Air Toxics Dispersion Modeling Analysis for Formaldehyde from Marshall Rackley (RST Engineering, PLLC) is received.

November 21, 2017 – Permit application **8400020.17B** received as a Title V significant modification. The application was deemed complete for processing.

November 29, 2017 – Memorandum from Matthew Porter, Meteorologist II, Air Quality Analysis Branch (AQAB) stating that the results from the Air Toxics Modeling Analysis are acceptable.

November 30, 2017 - DRAFT permit sent to Permittee and MRO for comment. The Permittee provided comments on draft permit via e-mail on **December 7, 2017**. Denise Hayes of MRO states via e-mail on **December 12, 2017** that she has reviewed the draft permit and has no comment.

December 15, 2017 – Permit **04897T20** issued as a Title V significant modification.

January 10, 2018 - DRAFT permit sent to Permittee and MRO for comment. The Permittee provided comments on draft permit via e-mail on **January 25, 2018**. Denise Hayes of MRO states via e-mail on **January 22, 2018** that she has reviewed the draft permit and has no comment.

IV. Permit Modifications/Changes and ESM Discussion

Page	Section	Description of Change
Attachment	Insignificant activities	-amended permit revision number
Cover	-	-amended all dates and permit revision numbers
All	Header	-amended permit revision number

Page	Section	Description of Change
2	Section 1 (Table)	-added a new kiln fuel feed system ID No. ES-KFFS and cyclone ID No. C5
7	2.1 C	-added a new kiln fuel feed system ID No. ES-KFFS and cyclone ID No. C5
10	2.1 C.3	-added references to permit conditions for 15A NCAC 02Q .0504
11-21	General Conditions	-updated shell conditions (v5.1 08/03/2017)

There were only minor, non-significant modifications to the equipment descriptions needed in Title V Equipment Editor (TVEE).

V. Application No. 840020.17B

H. W. Culp Lumber Co. Inc. has requested an air permit modification for installation of a new fuel feed system (ID No. ES-KFFS) with associated cyclone (ID No. C5). This system will process fuel for ES-Kiln-2 and ES-Kiln-3. All three (3) kilns will continue to receive fuel from the existing hammer mill operation (ID No. ES-4) but fuel for ES-Kiln-2 and ES-Kiln-3 will be split off downstream of the hammer mill to the proposed kiln fuel feed system (ID No. ES-KFFS) with new cyclone (ID No. C5).

VI. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 02D .0512, Particulates from Wood Products Finishing Plants
 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes
 15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
 15A NCAC 02D .0521, Control of Visible Emissions
 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions
 15A NCAC 02Q .0317, Avoidance Conditions (for 15A NCAC 2D .0530, Prevention of Significant Deterioration)
 15A NCAC 02D .1111, Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)

A regulatory review for these current permit conditions will not be included in this document.

VII. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The Permittee is not currently subject to any New Source Performance Standards. This permit modification does not affect this status.

NESHAPS/MACT - The Permittee is subject to 15A NCAC 02D .1111: Maximum Achievable Technology and 40 CFR Part 63 Subpart DDDD, “National Emission Standards for Hazardous Air Pollutants for the Plywood and Composite Wood Products”, for the three direct unadulterated wood-fired process heaters for drying lumber (ID Nos. ES-Kiln-1, ES-Kiln-2 and ES-Kiln-3). This permit modification does not affect this status.

PSD – The Permittee operates under a PSD avoidance condition limiting volatile organic compound emissions to less than 250 tons per year and limit kiln operations to less than 130,026,110 bd ft/yr on a 12-month rolling average basis from the two lumber kilns (**ID Nos. ES-Kiln-1 and ES-Kiln-2**). The permit condition includes monthly calculations (amount of lumber dried times an emission factor

of 3.83 pounds VOC per thousand board feet) and recordkeeping of VOC emissions and semiannual reporting requirements.

This facility was a PSD minor but with the addition of Kiln 3 they are now considered PSD major. Because of the facility’s baseline to potential demonstration, no specific condition is necessary for Kiln 3. The facility will now be considered PSD major going forward. This permit modification does not affect this status.

112(r) – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store one or more of the regulated substances in quantities above the thresholds in the Rule. This permit modification does not affect this status.

CAM

40 CFR Part 64 is applicable to any pollutant-specific emission unit, if the following three conditions are met:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- the unit’s pre-control potential emission rate exceeds either 100 tpy (for criteria pollutants) or 10/25 tpy (for HAP’s).

The addition of the new fuel feed system (ID No. ES-KFFS) with associated cyclone (ID No. C5) will result in an increase in PM10 by 0.882 tons per year. Therefore, since the unit is not classified as a large PSEU (pollutant specific emission unit; e.g., >100 tpy PM10 post control), CAM analysis is not necessary per Part 64 until the next renewal.

40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard. The following table identifies the current equipment/control device relationships:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES1	One wood planing operation	C1	One cyclone (168 inches in diameter)
		4B	One bagfilter (5,992 square feet of filter area)
ES2	One wood working operation	C2	One cyclone (51 inches in diameter)
ES4	One hammermill operation	C4	One cyclone (102 inches in diameter)
IES-11	One saw sharpening operation and associated	NA	One bagfilter (689 square feet of filter area)

CAM has been determined to be applicable to these control devices. This permit modification does not affect this status.

VIII. Facility Wide Air Toxics

Toxic air permit limits were removed in the last permit review (Air Permit No. 04897T20) due to the three kilns (ID Nos. ES-Kiln-1, ES-Kiln-2 and ES-Kiln-3) being subject to 40 CFR Part 63, Subpart DDDD.

H. W. Culp submitted an air toxic dispersion modeling analysis for formaldehyde for the three kilns. The modeling was reviewed by Mr. Matthew Porter, Meteorologist II, Air Quality Analysis Branch (AQAB).

According to Mr. Porter's memorandum dated November 29, 2017, the modeling of maximum-allowable facility-wide TAPs emissions adequately demonstrates compliance with AAL outlined in 15A NCAC 02D .1104, on a source by source basis, for formaldehyde. Therefore, the modeling analysis supports the determination that facility-wide formaldehyde emission increases and addition of ES-Kiln-3 poses no unacceptable risk to human health. This permit modification does not affect this status.

IX. Facility Emissions Review

See Table in the header for a summary of the actual emissions as reported to DAQ from the years 2012 to 2016.

X. Stipulation Review

The facility was last inspected by Carlotta Adams on **July 11, 2017**. Based on her observations the facility appeared to be in compliance with their Title V permit requirements.

XI. Affected State(s) Review

No public comment period is necessary for Part 1 501(c)(2) process. The second step application due within 12 months of start up of the new equipment will require public notice and review prior to issuance. The Mecklenburg County Department of Environmental Protection is an affected area within 50 miles of this facility.

XII. Conclusions, Comments, and Recommendations

A professional engineer's seal was not required for this modification.

A zoning consistency determination was submitted with the application required for this modification.

MRO recommends issuance of the permit and was sent a DRAFT permit prior to issuance (See Section III of this document for a discussion).

RCO concurs with MRO's recommendation to issue the modified air permit.